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ABSTRACT

A method of making a low-resistance electrical contact between a p-CdTe layer and outer contact layers by ion beam processing comprising:

a) placing a CdS/CdTe device into a chamber and evacuating the chamber;

b) orienting the p-CdTe side of the CdS/CdTe layer so that it faces apparatus capable of generating Ar atoms and ions of preferred energy and directionality;

c) introducing Ar and igniting the area of apparatus capable of generating Ar atoms and ions of preferred energy and directionality in a manner so that during ion exposure, the source-to-substrate distance is maintained such that it is less than the mean-free path or diffusion length of the Ar atoms and ions at the vacuum pressure;

d) allowing exposure of the p-CdTe side of the device to said ion beam for a period less than about 5 minutes; and

e) imparting movement to the substrate to control the areal uniformity of the ion-beam exposure on the p-CdTe side of the device.